



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,277	02/06/2002	Lin-Ren Shiao	JCLA8620	9727
23900	7590	04/26/2005	EXAMINER	
J C PATENTS, INC. 4 VENTURE, SUITE 250 IRVINE. CA 92618			WILKINS III, HARRY D	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/068,277	<b>Applicant(s)</b> SHIUE ET AL.	
	<b>Examiner</b> Harry D. Wilkins, III	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6-8 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 9-12 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*22*

### DETAILED ACTION

1. The anticipation rejection grounds based on McMenamin under 35 USC 102 have been withdrawn in view of Applicant's amendment of the claims.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6-8, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McMenamin (ZA 71 / 7184) in view of Applicant's admission of prior art and Lin et al (US 5,668,420).

McMenamin teaches (see page 4, lines 3-9 and 16-17) an electrolytic cell comprising two grid (mesh) electrodes, the electrodes being attached to DC power source continuously, and an electrolyte comprising NaCl (neutral salt). The first electrode is an anode and the second electrode is a cathode.

McMenamin does not teach using the apparatus to form ozone.

However, Applicant admits as prior art (see paragraph no. 4 of the specification) that the electrolytic generation of ozone was known in the prior art, particularly by having a  $\beta$ -PbO<sub>2</sub> coating on the surface of the anode. The ozone has the ability to disinfect water (see paragraph no. 2).

Therefore, it would have been obvious to one of ordinary skill in the art to have adapted the water purifier of McMenamin to produce ozone by adding a  $\beta$ -PbO<sub>2</sub> coating

Art Unit: 1742

on the surface of the anode as taught by Applicant's admission of prior art to further promote purifying of the water.

Lin et al teach (see paragraph spanning cols. 9 and 10) using electrodes made of DSAs, or Dimensionally Stable Alloys. These DSAs are titanium metals coated with iridium oxide. The dimensional stability provides the advantage of not being worn out during electrolysis so that they don't have to be replaced, thereby reducing maintenance.

Therefore, it would have been obvious to one of ordinary skill in the art to have substituted the DSA taught by Lin et al for the material of the anode and cathode of McMenamin because the DSA (Ti-IrO) provide the advantage of dimensional stability, thereby reducing maintenance.

Regarding claim 6, McMenamin teaches (see page 2, lines 21-23) using NaCl as the electrolyte.

Regarding claims 7 and 8, McMenamin teaches (see page 4, lines 16-17) using a "battery charger or the like" to supply the DC power. It would have been within the expected skill of a routineer in the art to have chosen a conventional type battery to supply the power.

Regarding claim 14, McMenamin does not disclose any heating or cooling. Thus, one of ordinary skill in the art would have expected the temperature to inherently include room temperature.

Art Unit: 1742

Regarding claim 15, the power source of McMenamin was capable of operating at 0.28-3.10 amperes. Since the prior art apparatus was capable of operating in the claimed fashion, the claim limitations are met by the prior art.

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McMenamin in view of Applicant's admission as applied to claims 1, 2, 6-8 and 14 above, and further in view of Foller (US 4,541,989).

The teachings of McMenamin and Applicant's admission are described above.

McMenamin and Applicant's admission do not teach using a bubbler for supplying bubbles into the electrolyte.

Foller teaches (see paragraph spanning cols. 2 and 3) that bubbles moved across the surface of an electrode which is producing ozone will help to dilute the ozone gas.

Therefore, it would have been obvious to one of ordinary skill in the art to have added a bubbler to the apparatus of McMenamin and Applicant's admission for the purpose of facilitating the removal of the ozone bubbles from the anode surface and dissolving them in the bulk electrolyte (water), thereby providing the disinfecting function.

***Allowable Subject Matter***

4. Claims 9-12 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1742

5. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art teaches or suggests attaching an oscillator to the DC power source as is required by claim 9. There would be no motivation to switch from the DC current applied by either McMenamin or the admitted prior art method to a pulsed current provided by the present invention.

### ***Response to Arguments***

6. Applicant's arguments filed 28 January 2004 have been fully considered but they are not persuasive. Applicant argued that:

a. Applicant's admission of prior art did not teach  $\beta$ -PbO<sub>2</sub> *coatings*.

In response, though Applicant's admission does not state that the anodes are coated with the  $\beta$ -PbO<sub>2</sub>, Foller et al (US 4,316,782 incorporated by reference and which appears to be the US patent related to the article by Foller and Tobias cited in paragraph 4) teaches that the  $\beta$ -PbO<sub>2</sub> was applied as a coating on a substrate material (see col. 8, lines 36-62).

b. Lin et al is not analogous art.

In response, the Examiner respectfully disagrees. Lin et al is reasonably pertinent to the problem at hand because the dimensionally stable electrodes provide improved resistance to corrosion for electrolysis performed in aqueous environments. Since the electrolytic apparatus of McMenamin used an aqueous electrolyte, one of ordinary skill in the art would have used the DSA electrodes in order to prevent premature corrosion of the electrodes. The "thruster" of Lin et al performs electrolysis on water to produce hydrogen and oxygen gases.

Art Unit: 1742

c. There is no motivation to combine Lin et al with McMenamin.

In response, the Examiner respectfully disagrees. As stated previously, the motivation to combine the DSA electrodes of Lin et al is to prevent corrosion of the electrodes, thereby extending operating lifetime.

d. McMenamin requires a plastic mesh separating the anode and cathode whereas the present invention does not require a membrane to separate the anode and cathode.

In response, the Examiner puts forth two responses to this argument, it is not claimed that the electrolytic cell operates without a membrane and the plastic mesh of McMenamin is not a membrane. A membrane in the sense that Applicant is referring to is a solid piece that only allows transport of certain chemical species across the membrane. In contrast the plastic mesh of McMenamin has holes which allow free flow of all the species of the electrolyte to flow through it.

e. McMenamin does not teach that the applied current is within the presently claimed range.

In response, Applicant is reminded that the presently pending claims are apparatus claims. Also, Applicant is reminded that the patentability of apparatus claims depend on what the apparatus is, not how it functions. Hence, the limitation that a specific current is applied is not given patentable weight because it is related to the manner of use of an apparatus.

f. Foller teaches adding a bubbler for a different purpose than in the present invention.

Art Unit: 1742

In response to applicant's argument that Foller adds a bubbler for a different purpose, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

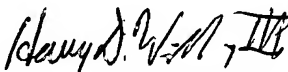


Art Unit: 1742

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-Th 10am-8:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Harry D Wilkins, III  
Examiner  
Art Unit 1742

hdw

  
ROY KING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700